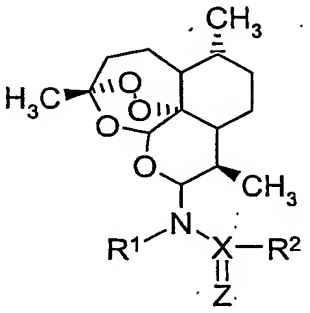
Claims

1. A compound of the general formula I



(I)

or a salt thereof, or a solvate thereof, or a solvate of a salt thereof,

in which

R^1 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group;

X represents a carbon atom, a sulfur atom, a sulfoxide group S=O or a group PR^3, P-O-R^3 or P-N(R^4)-R^3 where R^3 and R^4 each independently represent a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group;

Z represents an oxygen atom, a sulfur atom or a group NR^5 where R^5 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group; and

R^2 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, or a group $N(R^6)_2$, $NHNH_2$, NR^6NHR^6 or $NR^6N(R^6)_2$, or a group OR^6 or SR^6 where each R^6 independently represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, or a 10α-

dihydroartemisinyl group, or R^2 represents a group OR^7 or NR^6R^7 where R^6 represents a group as defined above and R^7 represents a bond attached as a substituent to R^5 together with the interjacent group -X=Z- forming an optionally substituted heterocyclic group where Z represents a group NR^5, or R^7 represents a bond attached as a substituent to R^1 together with the interjacent group -N-X(=Z)- forming an optionally substituted heterocyclic group.

2. A compound according to claim 1 in which R^1 represents a hydrogen atom, a methyl group, ethyl group or longer chain alkyl group or a branched alkyl group containing up to 9 carbon atoms, preferably a hydrogen atom, a methyl group or an ethyl group.

3. A compound according to claim 1 or 2 in which X represents a carbon atom, a sulfur atom, or a group PR^3, P-O-R^3 or P-N(R^4)-R^3 where R^3 and R^4 each independently represent a C_{6-18} aryl group or a 5- to 10-membered C-linked heteroaryl group or a 5- to 10-membered heterocyclyl-C_{1-6} alkyl group optionally substituted by one or more substituents selected from the group consisting of halogen atoms, hydroxyl, C_{1-4} alkyl, C_{2-4} alkenyl, C_{1-4} haloalkyl, C_{1-4} alkoxy, C_{1-4} haloalkoxy, amino, C_{1-4} alkylamino, di(C_{1-4} alkyl)amino and carboxyl groups.

4. A compound according to any of claims 1 to 3 in which Z represents an oxygen atom, or a group NR^5 where R^5 represents a hydrogen atom, a methyl group, ethyl group or longer chain alkyl group or branched alkyl group containing up to 9 carbon atoms, or a C_{6-18} aryl group or a 5- to 10-membered C-linked heteroaryl group or a 5- to 10-membered heterocyclyl-C_{1-6} alkyl group optionally substituted by one or more substituents selected from the group consisting of halogen atoms, hydroxyl, C_{1-4} alkyl, C_{2-4} alkenyl, C_{1-4} haloalkyl, C_{1-4} alkoxy, C_{1-4} haloalkoxy, amino, C_{1-4} alkylamino, di(C_{1-4} alkyl)amino and carboxyl groups.

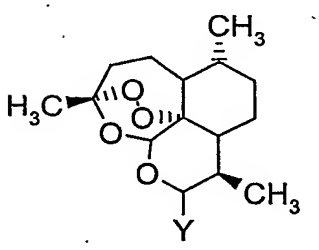
5. A compound according to any of the preceding claims in which R^2 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, or a group OR^6, SR^6, NH_2, NHR^6, or $N(R^6)_2$ where each R^6 indepently represents a methyl group, ethyl group or longer chain alkyl group or branched alkyl group containing up to 9 carbon atoms atoms, or is a C_{6-18} aryl group or a 5- to 10-membered C-linked heteroaryl group or a 5- to 10-membered heterocyclyl-C_{1-6} alkyl group optionally substituted by one or more substituents selected from the group consisting of halogen atoms, hydroxyl, C_{1-4} alkyl, C_{2-4} alkenyl, C_{1-4} haloalkyl, C_{1-4} alkoxy, C_{1-4} haloalkoxy, amino, C_{1-4} alkylamino, di(C_{1-4} alkyl)amino and carboxyl groups.

6. A compound according to any of the preceding claims in which R^1 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, preferably a hydrogen atom or an alkyl group, more preferably a hydrogen atom or a methyl group or an ethyl group; X represents a carbon, phosphorus or sulfur atom, preferably a carbon or sulfur atom; Z represents an oxygen atom or a group NR^5 in where R^5 represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, preferably an oxygen atom; and R^2 represents a group OR^6, SR^6, NH_2, NHR^6, or $N(R^6)_2$ where each R^6 independently represents a hydrogen atom or an optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl or aralkyl group, or a 10α-dihydroartemisinyl group, preferably a hydrogen atom or an optionally substituted alkyl or aryl group, more preferably R^2 represents a group NH_2, or a group NHR^6 where R^6 represents an alkyl group, or a group $N(R^6)_2$ where R^6 represent identical or differentiated alkyl groups.

7. A compound according to any of the preceding claims in which R^1 represents a hydrogen atom, X represents a sulfoxide group S=O, Z represents an oxygen atom, and R^2 represents a group NH_2; or in which R^1 represents a hydrogen atom, X represents a carbon atom, Z represents a group NH, and R^2

represents a group NHR^6 where R^6 represents a hydrogen atom or an optionally substituted alkyl, cycloalkyl, aryl or aralkyl group; or in which R^1 represents a hydrogen atom, X represents a carbon atom, Z represents an oxygen atom, and R^2 represents a group NHR^6 where R^6 is a hydrogen atom or an optionally substituted alkyl, cycloalkyl, aryl or aralkyl group.

8. A process for the preparation of a compound of the general formula I according to any of the preceding claims which comprises reacting a compound of the general formula II



(II)

in which Y represents a group containing an oxygen atom attached to the carbon atom of the artemisinin nucleus and also to a hydrogen atom or trimethylsilyl group, with a suitable halogenating agent to form a compound of the general formula II in which Y represents a halogen atom; and, if desired, reacting the compound of general formula II thus formed with an amine of the general formula $R^1NHX(=Z)R^2$ where R^1, R^2, X and Z are as defined any of the preceding claims to form a compound of general formula I.

9. A compound according to any of claims 1 to 7 for use in the treatment and/or prophylaxis of a disease.

10. A pharmaceutical composition which comprises a carrier and, as active ingredient, a compound according to any of claims 1 to 7.

11. Use of a compound according to any of claims 1 to 7 for the manufacture of a medicament for the treatment and/or prophylaxis of a disease caused by infection with a parasite.

12. A pharmaceutical composition according to claim 10 for the treatment and/or prophylaxis of a disease caused by infection with a parasite.

13. A method for treating a disease caused by infection with a parasite which comprises administering to a host in need of such treatment a therapeutically effective amount of a compound according to any of claims 1 to 7.